

**Emergency Support Function – No. 3  
PUBLIC WORKS AND ENGINEERING**

**Primary Agency:**

Virginia Department of Military Affairs

**VERT ESF Branch:**

Infrastructure Support Branch

**Support Agencies:**

- Virginia Department of Conservation and Recreation
- Virginia Department of Environmental Quality
- Virginia Department of Emergency Management
- Virginia Department of Forestry
- Virginia Department of General Services
- Virginia Department of Health
- Virginia Department of Housing and Community Development
- Virginia Department of Historic Resources
- Department of Mines, Minerals and Energy
- Virginia Department of Transportation
- Professional Engineers Emergency Response Team

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**Introduction**

This Emergency Support Function Annex (ESF 3) has five components that address sectors of the infrastructure. Another component, energy, is addressed in ESF #12. The components are:

- Section 1 – Public Works and Engineering
- Section 2 – Water Supply and Waste Water Treatment
- Section 3 – Drought Monitoring Task Force
- Section 4 – Dam Safety
- Section 5 – Debris Clearance

Each section of the annex includes a mission, organization, concept of operations, action checklist, definitions and references. Although there are individual taskings in each of the sections, the connecting elements focus on the critical infrastructure

**Purpose**

Emergency Support Function (ESF) #3 – Public Works and Engineering assists the Virginia Department of Emergency Management (VDEM) by coordinating and organizing the capabilities and resources of the Commonwealth to facilitate the delivery of essential services, technical assistance, engineering expertise, construction management, and other support to prevent, prepare for, respond to, and/or recover from an incident.

**Organization**

The Virginia Department of Military Affairs will maintain this ESF, and during emergency operations, will coordinate the activities of the above agencies and the Public Works and Engineering section. The Department of Health is responsible for Water Supply & Wastewater Treatment. The Department of Environmental Quality is responsible for drought monitoring. The Department of Conservation and Recreation

**Commonwealth of Virginia Emergency Operations Plan  
Emergency Support Function #3**

is responsible for Dam Safety. VDEM is responsible for coordinating the debris removal process.

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**Commonwealth of Virginia Emergency Operations Plan  
Emergency Support Function #3**

**Section 1: PUBLIC WORKS AND ENGINEERING**

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**Scope**

ESF #3 is structured to provide public works and engineering-related support for the changing requirements of all-hazards incident management to include preparedness, prevention, response, recovery, and mitigation actions. Activities within the scope of this function include conducting pre and post incident assessments of public facilities and infrastructure; executing emergency contract support for life-saving and life-sustaining services; providing technical assistance to include engineering expertise, construction management, and contracting and real estate services; providing emergency repair of damaged infrastructure and critical facilities; and implementing and managing the cost recovery programs for public works and infrastructure.

**Mission**

The mission of the Public Works and Engineering ESF is to assist with Virginia Emergency Operations Center (VEOC) response and recovery operations as appropriate. ESF #3 functions include, but are not limited to, assistance to local governments with (1) debris clearance; (2) the restoration of essential water, sewer, and energy-related systems, and (3) the demolition or stabilization of any damaged buildings, dams, or other structures which have become a public safety hazard due to the event. The restoration of airfields, ports, and other essential transportation-related facilities and equipment is addressed in the COVEOP, Volume 7: Transportation. The repair and restoration of electric power generation and distribution systems, fuel pipelines, and other energy-related essential services is addressed herein. Water supply and wastewater treatment facilities restoration is also addressed in this ESF.

**Organization**

A. Each of the following state agencies or departments has a major role in providing public works services to localities affected by a major disaster or emergency situation.

1. Virginia Department of Emergency Management (VDEM)
2. Department of General Services (DGS).
3. Department of Health, Office of Drinking Water (VDH, OWP).
4. Department of Housing and Community Development (DHCD).
5. Department of Conservation and Recreation (DCR).
6. Department of Environmental Quality (DEQ).
7. Department of Historic Resources (DHR).
8. Department of Economic Development (DED).

B. The Virginia Department of Military Affairs will maintain this ESF, and during emergency operations, will coordinate the activities of the above agencies which will constitute the Public Works and Engineering section within the VEOC. VDEM is also responsible for Debris Management. The Department of Health, Office of Drinking Water is responsible for Water Supply & Wastewater Treatment. The Department of Conservation and Recreation is responsible for Dam Safety.

C. The U. S. Army Corps of Engineers is the coordinating agency for this ESF in

## Commonwealth of Virginia Emergency Operations Plan

### Emergency Support Function #3

the *National Response Plan* and will assist the VEOC in both response and recovery activities for major disasters. Assistance will also be provided by other branches of the Department of Defense as needed. VDEM coordinates with FEMA, and FEMA coordinates with the Army Corps of Engineers. VDEM will provide the required interface and coordination with these federal agencies and officials.

#### Policies

##### Local Governments

- Local governments are responsible for their own public works and infrastructures and have the primary responsibility for incident prevention, preparedness, response, and recovery.
- Local governments are fully and consistently integrated into ESF #3 activities.
- When activated to respond to an incident, the primary agencies for ESF #3 develop work priorities in cooperation with local governments.
- Local authorities are responsible for obtaining required waivers and clearances related to ESF #3 support.

##### Private Sector

- The private sector is responsible for a large proportion of the infrastructure in the Commonwealth and participates in ESF #3 incident action planning and other planning activities as appropriate.
- The private sector is a partner and/or lead for the rapid restoration of infrastructure-related services.
- Appropriate private-sector entities are integrated into the planning and decision making processes as necessary.

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#### Concept of Operations

- A. A catastrophic or major emergency will cause severe property damage. Structures will be destroyed or severely weakened. Homes, public buildings, bridges, dams, and other facilities may have to be reinforced or demolished to ensure safety. Public works facilities will be damaged and may be partially or fully inoperable. Equipment in the immediate disaster area may be damaged or inaccessible.
- B. Local resources may not be adequate to meet emergency requirements. Local governments may need assistance with damage assessments, structural evaluations, emergency repairs to essential public works facilities, stabilizing or demolishing of structures to reduce hazards, and the provision of water for human health needs and firefighting. The Public Works and Engineering function within the VEOC (and later the JFO, when activated) must be able to identify and deploy significant numbers of personnel with public works, engineering, and construction skills along with construction equipment and materials from outside the affected area in order to provide these services.
- C. The VEOC will organize and deploy Needs Assessment Teams within hours of the event to any localities which have been devastated and cannot adequately assess their own critical needs. ESF #3 agencies may be asked to provide qualified technical persons to serve on these teams and to be responsible for the Public Works and Engineering part of the assessment.
- D. During normal operations, the VEOC is prepared to provide assistance to localities on the scene for such

## Commonwealth of Virginia Emergency Operations Plan

### Emergency Support Function #3

emergencies as hazardous materials incidents, oil spills, and missing aircraft searches. Emergency response teams have been organized and trained for these specific functions and an appropriate level of readiness is maintained. This same concept may also be used immediately following a major disaster for other functions. Time permitting, emergency response teams can be organized and readied for deployment during the Increased Readiness or crisis buildup period. The task for developing such teams should be assigned in advance. Resource listings of professional engineers, contractors, and equipment should be maintained as needed. Emergency response teams may be needed for the following public works related functions.

1. Restoration of water supply systems.
  2. Provision of water for firefighting.
  3. Emergency demolition or stabilization of buildings.
  4. Emergency demolition or stabilization of dams.
  5. Contract services for the repair of public works facilities.
- E. The Departments of General Services, Housing and Community Development, Conservation and Recreation, Health and Environmental Quality will provide the following water-related services as appropriate. They will perform tasks as requested by the VEOC and under their own initiative and authorities as applicable.
1. Support Damage Assessment and Needs Assessment surveys in the disaster area as requested by the VEOC.
2. Direct and coordinate all water and sewer mitigation, response, and recovery strategies leading up to, during, and following a disaster situation.
  3. Identify and address essential water needs (potable water.)
  4. Implement appropriate measures regarding the efficient utilization and distribution of limited water resources (conservation measures).
  5. Provide guidelines for the restoration and operation of water and sewage treatment facilities.
  6. Maintain and enforce regulatory standards for the treatment and disposal of waste, as necessary.
  7. Assess and restore flood protection and control facilities.
  8. Protect public safety in the event of an impending dam failure.
- F. The Departments of General Services, Housing and Community Development, Health, and Historic Resources will provide the following construction-related services as appropriate. They, too, will perform tasks as requested by the VEOC and under their own initiative and authorities as applicable.
1. Provide technical assistance in the identification, evaluation, stabilization, rehabilitation, and/or demolition of buildings and facilities.
  2. Assess and develop strategies to protect, stabilize, and restore buildings and facilities of historic significance.

## Commonwealth of Virginia Emergency Operations Plan

### Emergency Support Function #3

3. Assist in the management and coordination of emergency contracting services.
  4. Ensure that all construction and redevelopment complies with the appropriate building codes, zoning and land use regulations, as well as local and regional comprehensive plans.
  5. Assess existing building codes and standards and recommend revisions to mitigate future damage.
  6. Develop procedures to effectively license and monitor the work of building contractors. Many are likely to come to the disaster area to provide their services as a part of the recovery effort.
  7. Develop procedures to effectively assist localities to process the large number of building permits which may be required.
- G. The Secretary of Commerce and Trade will coordinate activities to identify, obtain and distribute available economic aid to assist localities to rebuild their public works infrastructure.
- H. Professional engineering, architectural, and preservation organizations may also be available to assist. VDEM will coordinate with the Professional Engineers Emergency Response Team. Their expertise and knowledge of treatment plants, roads, bridges, pipelines, dams, airports, reservoirs, buildings, etc. would be invaluable in augmenting government recovery efforts in a timely matter. Memorandums of understanding between local governments and private contractors to expedite such assistance in time of emergency should be developed in advance.
- I. The VEOC and the JFO will coordinate closely with the U. S. Army Corps of Engineers, the ESF #3 coordinating federal agency. There may be more federal manpower and equipment resources available for this function than state and local resources. If federal resources are to be used, prior agreements would again provide for a more timely response.
- J. Access to the disaster area will be dependent upon the re-establishment of ground routes. Debris clearance and emergency road repairs will be given top priority. The Department of General Services will develop and maintain a Debris Management Plan in coordination with VDOT. Resource support and assistance may be requested from other ESF #3 agencies.
- K. All state agencies should continue to monitor the activities of their personnel when they have an emergency assignment. Time sheets and other administrative activities will continue to be administered by the parent agency. Accurate records must be maintained of all disaster related expenses in order to receive federal disaster reimbursement aid.

**Commonwealth of Virginia Emergency Operations Plan**  
**Emergency Support Function #3**

**Action Checklist**

**1. Routine Operations**

- a. Develop and maintain this annex in coordination with all primary and support agencies. Designate individuals to be responsible for: debris clearance, infrastructure for water and sewer systems, energy distribution systems, and communications pathways, building structural safety, dam safety, and operations of airfields and ports. Prepare and maintain resource listings.
- b. Designate individuals with the needed public works expertise to serve on Needs Assessment Teams and Damage Assessment Teams. See ESF #5: Emergency Management agency personnel will participate in the ongoing VDEM training program.
- c. Designate individuals to be responsible for organizing and maintaining an emergency response team(s) for each of the following functions: debris management, water and sewer systems, building structural safety, dam safety, airfields, ports and coastline structures, and contract management.
- d. Pre-identify critical public works facilities in coordination with local governments.
- e. Encourage and assist local governments to develop mutual aid agreements with U. S. military bases, private contractors, and other potential resource providers.
- f. Develop procedures about how to effectively manage and coordinate emergency contracting services.

**2. Increased Readiness**

A natural or man-made disaster is threatening some part of the state.

- a. Review plans, resource listings, and procedures. Update as needed. Review applicable codes and regulations.
- b. Establish liaison with the VEOC (Director, Infrastructure and Support Branch), and when they arrive, with federal ESF-3 officials.
- c. When requested, provide persons with public works expertise to staff Needs Assessment Teams and Damage Assessment Teams.
- d. Identify and staff an emergency response team(s) for each of the functions listed above. Assure that personnel and equipment are operationally ready and available.

**3. Response Operations**

a. Mobilization Phase

*Conditions continue to worsen requiring full-scale mitigation and preparedness activities.*

- 1) Assemble emergency response teams and prepare for deployment. Procure needed supplies and arrange for logistical support. Designate potential staging areas.

**Commonwealth of Virginia Emergency Operations Plan**  
**Emergency Support Function #3**

- 2) Encourage mitigation efforts such as the movement of essential equipment to high ground and the sandbagging of public works facilities.
- 3) Begin to keep an official record of all disaster-related expenditures and continue to do so for the duration of the event.

b. Emergency Phase

*Disaster strikes or is imminent. An emergency response is required to save lives and protect property.*

- 1) Dispatch emergency response teams to the disaster area as needed and as requested by the VEOC. Maintain communications and operational control.
- 2) Review recovery procedures and resources listings. Update as needed.

c. Emergency Relief Phase

*Assistance is provided to affected individuals and organizations. Stop-gap measures (such as emergency housing complexes and potable water trucks) are implemented in order to provide essential services. Preliminary damage assessment surveys are conducted. This phase ends when the immediate threat is no longer imminent.*

- 1) Analyze Needs Assessment, Initial Damage Assessment and Local Situation Reports to determine the extent of damage to public works facilities and equipment in each affected locality.
- 2) Clear debris from primary roads and other essential facilities. See Attachment 1.
- 3) Upon request, dispatch emergency response teams to assist local governments to inspect public works facilities and to restore essential services as soon as possible.
- 4) Coordinate with federal (ESF 3) officials to provide additional federal manpower and equipment as needed to bring essential public works facilities back on line.

4. Recovery Operations

a. Damage Assessment Phase

- 1) Review infrastructure initial damage assessments (IDA) submitted by local governments, non-profit utility providers, and state agencies.
- 2) In coordination with VDEM, ESF #3 agencies must verify local damage assessment by conducting onsite state assessment.
- 3) ESF #3 agencies may be asked to serve on joint FEMA/COV teams to conduct Preliminary Damage Assessments (PDA).

b. Emergency repairs and debris management

- 1) State agencies provide appropriate oversight to emergency repairs to critical infrastructure and to debris clearance and management;
- 2) Assist local governments to clear debris and to restore public works facilities and equipment.



**Commonwealth of Virginia Emergency Operations Plan**  
**Emergency Support Function #3**

- 3) Facilitate contract arrangements.
- 4) Assure the implementation of codes and regulations as required.
- 5) Agencies and organization eligible for federal reimbursement for emergency and disaster work record and maintain documentation of work accomplished.

c. Permanent repairs and reconstruction

- 1) ESF #3 agencies make permanent repairs to damaged facilities, implementing improvements and mitigation measures, if appropriate.
- 2) Assist local governments and non-provide utility providers in restoring services and implementing improvements and mitigation measures, if appropriate.

d. Recovery of Expenditures

- 1) For a presidential declaration of emergency or major disaster, coordinate with FEMA to implement the Public Assistance Program to recovery the disaster-related costs incurred by eligible public and non-profit agencies. (See *COVEOP, Basic Plan, Appendix E* and *COVEOP, Support Annex 2: Administrative Plan to Manage Recovery Programs*)
- 2) For non-declared emergencies, assist local governments through the state public assistance program. (See *COVEOP, Support Annex 2: Recovery Programs*)
- 3) ESF #3 agencies provide technical assistance to VDEM to assist all eligible applicants for the Public Assistance Program.

**Commonwealth of Virginia Emergency Operations Plan  
Emergency Support Function #3**

**Section 2 – WATER SUPPLY AND WASTEWATER TREATMENT**

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**Mission**

To assist local governments and public service authorities restore drinking water and human waste disposal facilities and systems following a disaster or emergency situation.

**Organization**

The Division of Water Supply Engineering (DWSE), Virginia Department of Health (VDH) is the primary state agency responsible for helping localities and coordinating with the VEOC in the event of a water system-related emergency. A health and medical function or coordinating office will be established within the VEOC by VDH during emergency operations.

Assistance will be provided by:

- A. Office of Emergency Medical Services, VDH.
- B. Department of Emergency Management.
- C. Department of Environmental Quality.
- D. State Corporation Commission.
- E. Division of Consolidated Laboratory Services, DGS.
- F. Department of Military Affairs (National Guard).

standards and regulations pertaining to the safety of water for human consumption. It must:

- 1. Develop and maintain plans and procedures to assist local governments with water-related emergency operations.
  - 2. Keep the VEOC health and medical function (EMS) informed about the status of any potential or occurring water system-related problem in the state and recommend appropriate actions, such as an emergency declaration, when necessary.
  - 3. Coordinate emergency assistance with DEQ and the health and medical function (EMS) within the VEOC.
  - 4. Provide the required interface with EPA and other federal agencies during emergency operations.
- B. The State Corporation Commission (SCC) certifies and regulates private water companies which serve 50 customers or more. (The certificates identify areas to be served, terms of service, prescribed rates, and provide protection against encroachment by other water companies.) It will report any deficiencies in the quality and quantity of water provided to the Office of Drinking Water, VDH.
- C. The Division of Consolidated Laboratory Services, DGS, will assist by providing laboratory services to detect and identify any chemical or biological contaminants in water.
- D. Local governments have the primary duty of ensuring adequate water supplies within their jurisdiction. The local

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**Concept of Operations**

- A. The Office of Drinking Water, VDH supervises all waterworks and water supply systems within the state to protect the public health. It issues operational permits to local water systems and establishes and enforces

## Commonwealth of Virginia Emergency Operations Plan

### Emergency Support Function #3

Public Works Department or water supplier will keep local government informed of any potential or occurring problems.

- E. Local governments must develop and maintain emergency response plans and procedures for water-related emergency situations. It should include provisions for repairing system failures quickly and for mandatory conservation in the event of water shortages.
- F. More specifically, the Office of Drinking Water, VDH, will provide the following services.
  - 1. Central Office staff provides response coordination and direction, including setting emergency response priorities, allocation of staff and resources, providing technical information, and coordinating through the health and medical function with other response agencies.
  - 2. Six Environmental Engineering Field Directors supervise and coordinate emergency response by District Engineers within their areas of responsibility.
  - 3. Three Divisions of Shellfish Sanitation Field Offices (Accomac, Norfolk, and Whitestone) assess impacts on the shellfish population and take action to close shellfish grounds as required.
  - 4. District Engineers and Assistant District Engineers are assigned to planning districts and are responsible for assisting local jurisdictions with emergency response and damage assessment.
- G. All water-related problems will be evaluated for their impact on public

health. The most serious threats to public health will be corrected first. In the absence of other guidelines, the following priorities will apply:

- 1. First - Provision of safe drinking water.
- 2. Second - Ensuring sanitary human waste disposal.
- 3. Third - Maintaining general sanitation.
- H. The Office of Drinking Water Central Office staff will:
  - 1. Determine the potential impact of the disaster on water and waste water systems.
  - 2. Coordinate resource allocation to support damage assessment and provide technical support to local jurisdictions.
  - 3. Assist the VEOC in identifying and obtaining needed resources to guarantee the supply of safe drinking water and ensure sanitation.
  - 4. Develop strategy for assessing and managing impacts on shellfish sanitation.
- I. The Office of Drinking Water Field Directors will prioritize emergency operations in the disaster area based on guidelines from the Office of Drinking Water. The Field Director will assign staff and resources to specific missions and coordinate with other response organizations to ensure a unified approach to the incident.
- J. Office of Drinking Water District Engineers will:

**Commonwealth of Virginia Emergency Operations Plan**  
**Emergency Support Function #3**

1. Assess and report damage through the Field Director based on an on-site inspection.
  2. Advise local authorities on most effective means of providing emergency services and eliminating real and potential public health hazards. Serve as an engineer and technical advisor where no other such services are available.
  3. Advise local authorities on restoration of safe drinking water, municipal sewage treatment, and human waste disposal based on priorities set by the Field Director and the Office of Drinking Water.
- K. Shellfish Sanitation Field Offices determine the extent of the disaster and effect on water quality relating to shellfish beds. In response to contamination in the Chesapeake Bay watershed, the Division of Shellfish Sanitation will issue emergency regulations to close shellfish grounds as required.
- L. Water outage emergencies are caused by a failure at some point(s) within the distribution system. Usually, the drinking water supply to a known service area is stopped until the facility or system break can be repaired.
- M. A failure of the sewage treatment or human waste disposal system is usually repaired before it constitutes an emergency situation. Likewise, a sewage overflow usually recedes before it becomes an emergency.
- N. Public drinking water supplies may be owned and operated by local governments singly, jointly, or by private companies. The Department of Health (VDH) has regulatory authority.
- O. When a water contamination emergency is localized, the city or county must, in coordination with state authorities (VDH and the VEOC), take action to restrict use during the emergency period.
- P. Local governments must also restrict water use in a severe and widespread water outage or water contamination situation. If appropriate, the Governor may need to declare an emergency to facilitate coordinated action between state and local governments and to permit the state to provide emergency assistance to supplement local efforts.
- Q. The Division of Water Supply Engineering, VDH, maintains a listing of manufacturers and suppliers of pipe and fittings for water distribution systems and common treatment chemicals for water purification. It can also assist public works departments in obtaining these items as well as other needed supplies and equipment during emergencies.
- R. If a local water shortage or outages is logistics related, the Division of Water Supply Engineering can intervene to assist with and expedite the procurement of needed supplies, such as chlorine, pipe, or generators.
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## Commonwealth of Virginia Emergency Operations Plan

### Emergency Support Function #3

#### Definitions

- A. **Raw Water** – All water upstream of the intake point of the water treatment plant.
- B. **Potable Water/Pure Water** – Water fit for human consumption and use which is sanitary and normally free of minerals, organic substances, and toxic agents in excess of reasonable amounts for domestic usage in the area served and normally adequate in supply for the minimum health requirements of the persons served.
- C. **Waterworks** – A system that serves piped water for drinking or domestic use of (1) the public, (2) at least 15 connections, or (3) an average of 25 individuals for at least 60 days out of the year. The term waterworks shall include all structures, equipment, and appurtenances used in the storage, collection, purification, treatment, and distribution of pure water, except the piping and fixtures inside the building where such water is delivered.
- D. **Community Water System** – A waterworks which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.
- E. **Domestic Usage** – Normal family or household use, including drinking, laundering, bathing, cooking, heating, cleaning, and flushing toilets.
- F. **Water Shortage** – When the available water supply is not sufficient to meet anticipated demand over a period of time.
- G. **Water Outage** – When a part or all of the water supply to an area is halted because of some form of mechanical failure, either natural or man-made.

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#### Authorities

- A. Federal Safe Drinking Water Act (Public Law 93-523), 1974, as amended.
- B. Code of Virginia, Title 32.1, Sections 32.1-167 through 32.1-176, Public Water Supplies, as amended.
- C. Code of Virginia, Title 15.1, Section 15.1-37.3:4, Counties, Cities and Towns, as amended.
- D. Code of Virginia, Title 44, Sections 44-146.16 through 44-146.19, Emergency Services and Disaster law of 2000, as amended.

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#### Reference

Commonwealth of Virginia, Waterworks Regulations, Public Drinking Water Supply, Virginia Department of Health.

**Commonwealth of Virginia Emergency Operations Plan**  
**Emergency Support Function #3**

**Action Checklist - Water Supply and Wastewater Treatment**

**1. Routine Operations**

- a. Plan for emergency water and wastewater operations.
- b. Train personnel to quickly coordinate the repair of damages to the drinking water system.
- c. Assist local jurisdictions in mitigation and preparation activities as requested.

**2. Increased Readiness**

A disaster with the potential to impact water and wastewater systems is threatening the Commonwealth.

- a. Start documenting all actions.
- b. Identify key personnel for assignment to response and assessment duties.
- c. Coordinate actions with the Office of EMS.
- d. Provide technical advice as requested to local jurisdictions for the protection of their lifeline water systems.
- e. Review emergency response plans and the Office of Drinking Water Manual for Response to Emergency/Disaster Situations.

**3. Response Operations**

**a. Mobilization Phase**

A significant disaster that will impact water and wastewater systems is imminent or in progress.

- (1) Alert all Office of Drinking Water personnel.
- (2) Determine the potential magnitude of the disaster.
- (3) Expedite administrative procedures to allow rapid deployment of personnel when needed.
- (4) Initiate a running log of each situation with a water or wastewater system impact or concern.

**b. Emergency Phase Disaster strikes. Emergency response actions are required to save lives and protect property.**

- (1) Initiate tracking of all costs and expenditures.
- (2) Coordinate activities with the Office of EMS which becomes the health and medical function within the VEOC.
- (3) Coordinate activities with other key infrastructure response agencies, including the Department of Military Affairs, State Corporation Commission, and the Water Division of the Department of Environmental Quality.

**Commonwealth of Virginia Emergency Operations Plan**  
**Emergency Support Function #3**

- (4) As disaster size and effect is more clearly identified, coordinate with commercial suppliers and federal resources to be prepared to augment expected local jurisdiction emergency relief efforts.
  - c. Emergency Relief Phase Direct effects of the disaster are no longer impacting operations.
    - (1) Assign additional staff and resources as needed to field offices within the disaster area.
    - (2) Support rapid damage and needs assessment.
    - (3) Issue or coordinate any permits necessary for recovery of lifeline water and wastewater services.
    - (4) Assist local jurisdictions with technical advice and resource coordination to deal with water and wastewater problems.
    - (5) Assist the VEOC Health and Medical staff and local jurisdictions in obtaining appropriate resources to restore services.
    - (6) Assist the VEOC Health and Medical staff in the development and dissemination of public information relating to water and wastewater restoration.
    - (7) Assess impact on shellfish and close beds as required.
- 4. **Recovery Operations**  
Emergency relief measures have been successful in restoring lifeline service to an acceptable level. Short-term disaster effects are no longer significant. However, long-term problems in restoration of the infrastructure remain.
  - a. As needed, plan for long-term recovery and restoration of services to pre-disaster levels.
  - b. Continue to provide technical support to local jurisdictions in the recovery of facilities and services.
  - c. Evaluate reopening of shellfish beds.
  - d. Fully document all recovery actions.

### Section 3 – DROUGHT MONITORING TASK FORCE

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#### Mission

To monitor the development of drought conditions, to prepare drought status reports to the VEOC as needed, and to provide need-to-know information to the public to ameliorate the effect of drought conditions.

#### Organization

The Virginia Drought Monitoring Task Force (VDMTF) is coordinated by the Department of Environmental Quality and is made up of representatives from the following state and federal agencies:

- A. Virginia Department of Agriculture and Consumer Services (VDACS).
- B. Office of the State Climatologist, University of Virginia.
- C. Virginia Department of Emergency Management (VDEM).
- D. Virginia Department of Environmental Quality (DEQ).
- E. Virginia Department of Forestry (DOF).
- F. Virginia Department of Health (VDH).
- G. National Weather Service (NWS).
- H. U. S. Geological Survey (USGS).

The VDMTF should not be confused with the cabinet-level task force which is usually formed by the Governor to deal with emergency conditions during periods of severe drought.

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#### Concept of Operations

- A. In monitoring drought conditions, the VDMTF will compile drought-related data and information, prepare status reports, and establish an official point of contact for news media inquiries.
- B. The task force also provides a mechanism for the exchange of information among the member agencies which enable the agencies to better respond to drought-related problems in their respective areas of responsibilities. The VDMTF also informs the Governor's Office when conditions reach a point where action on the Governor's part is needed to minimize the adverse impact of the drought on the citizens of the state.
- C. During period of wet weather, the VDMTF remains inactive. It is activated only when there are preconditions for drought, such as significant precipitation deficits, low stream flows, high evaporative rates caused by prolonged high temperatures, widespread reports of water shortages, and other factors. The VDMTF meets on an as needed basis, but monitoring of the relevant drought indicators (precipitation, stream flow, ground water levels, Palmer Index, etc.) is being conducted on a continuing basis as part of the member agencies' normal activities. The timing of the first meeting for the year depends on how wet or dry the winter and spring seasons have been. Any member can request a meeting. Normally, when a drought-related occurrence affects a task force member's program, he or she notifies the coordinator who shares the information with the other members.



**Commonwealth of Virginia Emergency Operations Plan  
Emergency Support Function #3**

- D. The triggering factor for convening the task force is a combination of the Palmer Drought Index, moisture deficits, surface and ground water levels, and other indices. No specific targets have been established for each of the triggering parameters; but in the past, the task force has convened when the Palmer Drought Index has fallen below -3.00 at the start of summer; when precipitation remains considerably below normal for several weeks; or when there are widespread reports of water shortages caused by wells or streams drying up.
- E. The information gathered by the VDMTF is incorporated into drought status reports. Reports may be issued biweekly, monthly, or as needed, depending on the severity of the drought. Members of the task force contribute to the status report by reporting on the effects of the drought on their respective programs. The report also gives recommendations on actions that may be taken by the different sectors to minimize the impacts of drought. DEQ prepares the report and VDEM distributes it to all local governments, the news media, and other interested agencies or groups.
- F. Each member agency has some mechanism for providing technical assistance to localities in their respective areas of interest. Drought disaster assistance, such as financial and equipment loan, are coordinated by VDEM. Disaster assistance becomes available only after an emergency declaration by the Governor.

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## **Section 4 – DAM SAFETY**

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### **Mission**

To assist local governments to evacuate downstream inundation areas and to take other actions as needed to protect human life or property in the event of an imminent or impending dam failure or major spillway discharge.

### **Organization**

- A. If there is a problem at a dam, dam owners are responsible for notifying local government(s) and for recommending evacuation downstream if appropriate. Local governments are responsible for making the decision to evacuate, for effecting evacuation, and for notifying the VEOC. In a backup capacity, the VEOC will also notify affected cities and counties downstream.
- B. In accordance with the Virginia Dam Safety Act, the Virginia Soil and Water Conservation Board administers the dam safety program through the Department of Conservation and Recreation. The Department of Conservation and Recreation (DCR) also maintains this part of the COVEOP.

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### **Concept of Operations**

- A. Virginia Power, Appalachian Power, the U. S. Army Corps of Engineers, the Tennessee Valley Authority, and some municipalities own and operate large dams in Virginia. Most are regulated by the Federal Energy Regulatory Commission (FERC). The Virginia Department of Conservation and Recreation regulates most other medium-to-large non-federally regulated

dams in accordance with the Virginia Dam Safety Act.

- B. The owner of each dam is responsible for its safe and proper design, construction, operation, and maintenance. Owners of dams that exceed 25 feet in height, impound more than 50 acre-feet (100 acre-feet for agricultural purposes) of water, and which are not regulated by others must comply with the Virginia Dam Safety Act. Smaller dams are excluded.
- C. There are four “classes” of dams from high hazard to low. The owner of each Class I, II, and III dam covered by the Virginia Dam Safety Act is required to prepare an Emergency Action Plan (EAP). This plan shall include a method of notifying local authorities and notifying and warning persons downstream of the dam in the event of an impending dam failure or overtopping. A copy of each EAP must be provided to the affected local government, to the regulatory agency, and to the Virginia Department of Emergency Management (VEOC).
- D. Standards have been established for three emergency stages. The affected public will be routinely notified of conditions at a dam during Stage I. If conditions deteriorate to Stage II, the public in the potential inundation area downstream will be alerted for possible evacuation. If conditions deteriorate further to Stage III, local government will declare a local emergency and order an evacuation. It is recognized, of course, that a dam may collapse without warning.
- E. The Virginia Dam Safety Act covers the basic dam safety responsibility for dams

**Commonwealth of Virginia Emergency Operations Plan  
Emergency Support Function #3**

in the Commonwealth. All dams are included except those which are specifically excluded (See below). The 467 dams regulated by the Act range in size to over 240 feet in height and over 50,000 acre-feet in capacity. About 100 are Class I (high hazard potential) and 110 are Class II (intermediate hazard potential). All regulated dams except Class IV (potential damage confined to the owner) require that the owner prepare an Emergency Action Plan.

- F. Most large dams that are excluded from the requirements of the Virginia Dam Safety Act, due to licensing or ownership, are regulated by their respective federal agency (Corps of Engineers, other Dept. of Defense agencies, Forest Service, National Park Service, etc.). Some are regulated by the Virginia Department of Mines, Minerals, and Energy. The operators of large hydroelectric dams and others licensed by the Federal Energy Regulatory Commission (FERC) are also required to prepare and implement EAPs. Localities must be prepared to evacuate persons downstream from these dams as well as for those under the jurisdiction of the Virginia Dam Safety Act. When FERC schedules dam emergency response exercises and drills, localities are expected to participate.
- G. Each city and county is required to develop and maintain a local Emergency Operations Plan (EOP) which identifies any federal or state regulated dams in their jurisdiction and which sets forth procedures for the evacuation of persons downstream. Each dam EAP will identify the inundation area and persons to be evacuated.

- H. The possibility of a dam failure without warning is very remote for a large reinforced concrete gravity type dam. Any unsafe condition would normally be detected early and appropriate actions would be taken. If any possibility of dam failure is indicated or if a controlled release from the spillway should be required, the dam owner/operator will notify local government and the VEOC immediately. The failure of smaller rock-fill or earthen type dams, which might result from heavy flooding and/or erosion, is more likely and could occur with little or no advance warning. Such dams should be closely monitored by dam owners and by local officials during and immediately following periods of heavy rain.

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**Commonwealth of Virginia Emergency Operations Plan  
Emergency Support Function #3**

**DAM CLASSIFICATIONS AND EMERGENCY STAGES**

**Dam Classifications**

Dams that exceed 25 feet in height and impound more than 50 acre-feet (100 acre-feet for agricultural) must be classified as to the degree of hazard potential they impose should the structure fail.

- A. Class I (High Hazard) - Probable loss of life; excessive economic loss.
- B. Class II (Moderate Hazard) - Possible loss of life; appreciable economic loss.
- C. Class III (Low Hazard) - No loss of life expected; minimal economic loss.
- D. Class IV (Low Hazard) - No loss of life expected; no economic loss to others.

**Emergency Stages**

When abnormal conditions impact on a dam, such as flooding or minor damage to the dam, the dam owner should initiate specific actions that will result in increased readiness to respond to a potential dam failure.

The following stages identify actions which may be appropriate and available response times:

- A. Stage I - Slowly developing conditions; five days or more may be available for response. Owner should increase frequency of observations and take appropriate readiness actions.
- B. Stage II - Rapidly developing conditions; overtopping is possible. One to five days may be available for response. Increase readiness measures. Notify local Coordinator of conditions and keep him informed.

- C. Stage III - Failure has occurred, is imminent, or already in flood condition; overtopping is probable. Only minutes may be available for response. Evacuation recommended.

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**AUTHORITIES AND REFERENCES**

- A. Virginia Dam Safety Act of 1982 (Article 2, Chapter 6, Title 10), Code of Virginia.
- B. Virginia Soil and Water Conservation Board, Regulation VR 625-01-00, *Impounding Structure Regulation*, February 1, 1989.
- C. "Virginia State Directory of Dams," Commonwealth of Virginia, Department of Conservation and Recreation, October 1991.

## Section 5 – DEBRIS MANAGEMENT

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### Mission

To facilitate and coordinate the removal, collection, and disposal of debris following a disaster in order to mitigate against any potential threat to the health, safety, and welfare of the impacted citizens, expedite recovery efforts in the impacted area, and address any threat of significant damage to improved public or private property.

### Organization

Debris removal is a function of the Public Works and Engineering Support function. VDOT, DGS, and VDEM are the primary state coordinating agencies and will work in conjunction with designated support agencies, utility companies, waste management firms, and trucking companies, to facilitate the debris clearance, collection, reduction, and disposal needs of state and local governments following a disaster.

The U. S. Army Corps of Engineers is the coordinating agency for this function in the *National Response Plan* and will provide assistance to state agencies in major disasters as requested.

be relying heavily on private contractors to fulfill the mission of debris removal, collection, and disposal. Utilizing private contractors instead of government workers in debris removal activities has a number of benefits. It shifts the burden of conducting the work from state and local government entities to the private sector, freeing up government personnel to devote more time to their regularly assigned duties. Private contracting also stimulates local, regional, and state economies impacted by the storm, as well as maximizes state and local governments' level of assistance from the federal government. Private contracting allows the state and its political subdivisions to more closely tailor their contract services to their specific needs. The entire process (e.g. clearance, collection, transporting, reduction, and disposal, etc.) or segments of the process can be performed by private contractors.

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### Concept of Operations

- A. All state departments and agencies with authority over state-owned property will remove debris from that property. Local governments will remove debris from their property plus any debris on private property when in the interest of public safety.
- B. Due to the limited quantity of resources and service commitments of state agencies and local governments, the state and its political subdivisions will
- C. VDEM and DGS will assist with debris removal operations for state agencies and also provide assistance to local governments when requested. Local governments will be responsible for removing debris from property under their own authority, as well as from private property when it is deemed necessary to protect the health and safety of residents.
- D. The Department of General Services will develop and maintain a list of approved contractors who have the capability to provide debris removal, collection, and disposal in a cost effective, expeditious, and environmentally sound manner following a disaster. The listing will categorize contractors by their capabilities and service area to facilitate

## Commonwealth of Virginia Emergency Operations Plan

### Emergency Support Function #3

their identification by state agencies and local governments, as well as ensure their effective utilization and prompt deployment following the disaster.

#### 1. Contracts and Cooperative Agreements

- a. Model contracts with a menu of services and generic scopes of work will be developed prior to the disaster to allow state agencies and local jurisdictions to more closely tailor their contracts to their needs, as well as expedite the implementation of them in a prompt and effective manner.
- b. Every state agency and political subdivision will be responsible for managing the debris contract from project inception to completion unless the government entities involved are incapable of carrying out this responsibility due to the lack of adequate resources. In these circumstances, other state and federal agencies will be identified to assume the responsibility of managing the debris contract. Managing the debris contract would include such things as monitoring of performance, contract modifications, inspections, acceptance, payment, and closing out of activities.
- c. State agencies are encouraged to enter into cooperative agreements with other state agencies and local governments to maximize the utilization of public assets. The development of such agreements must comply with the guidelines established in their agency procurement manual. All state agencies and local governments who wish to participate in such agreements should be pre-identified

prior to the agreement being developed and implemented.

#### 2. Site Selection

Debris storage and reduction sites will be identified and evaluated by interagency site selections teams comprised of a multi-disciplinary staff who are familiar with the area. A listing of appropriate local, state and federal contacts will be developed by the appropriate agencies to expedite the formation of the interagency, multi-disciplinary site selection teams. Site selection criteria will be developed into a checklist format for use by these teams to facilitate identification and assessment of potential sites. Criteria will include such factors of ownership of property, size of parcel, surrounding land uses and environmental conditions, and transportation facilities that serve the site.

#### 3. Debris Removal Priorities

The debris removal process must be initiated promptly and conducted in an orderly, effective manner in order to protect public health and safety following a major or catastrophic disaster. To achieve this objective, the first priority will be to clear debris from key roads in order to provide access for emergency vehicles and resources into the impacted area. The need and demand for critical services will be increased significantly following a disaster. Therefore, the second priority for debris removal resources is providing access to critical facilities pre-identified by state and local governments. The third priority for the debris removal teams will be the elimination of debris

## Commonwealth of Virginia Emergency Operations Plan

### Emergency Support Function #3

related threats to public health and safety. This will include such things as the repair, demolition, or barricading of heavily damaged and structurally unstable buildings, systems, or facilities that pose a danger to the public. Any actions taken to mitigate or eliminate the threat to the public health and safety must be closely coordinated with the owner or responsible party. If access to the area can be controlled, the necessary action can be deferred.

#### 4. Debris Classification

To facilitate the disposal process, debris will be segregated by type. It is recommended that the categories of debris established for recovery operations will be standardized. The state will adapt the categories established for recovery operations by the Corps of Engineers. Modifications to these categories can be made as needed. Hazardous and toxic materials/contaminated soils, and debris generated by the event will be handled in accordance with federal, state, and local regulations.

#### 5. Debris Removal Practices

To maximize the recover of costs for debris removal and disposal, local and state agencies, and their contractors, should adopt the standard technical and management practices established for recovery by the Federal Emergency Management Agency (FEMA). VDEM will provide pre-disaster training and technical assistance to help potential applicants prepare for the cost recovery processes implemented after a major disaster.

### Task Assignments

#### A. Department of General Services (DGS)

1. Assist with contracting for the removal of debris from state owned property.
2. Develop and maintain a list of contractors who provide debris removal, collection, reduction, and disposal services.
3. Develop model contracts and generic scopes of work to assist state agencies and local jurisdictions in the development and implementation of their debris removal contracts.
4. Assist state agencies and local governments in developing cooperative agreements for debris removal.

#### B. Department of Environmental Quality (DEQ)

1. Provide technical assistance to state agencies, local jurisdictions, and private contractors regarding environmental issues that will arise during the debris removal, storage, reduction, and disposal process.
2. Assist state agencies and local governments in the selection, establishment, management, and closure of debris storage and reduction sites.
3. Expedite the permit process to accomplish the task at hand in an effective, timely, and efficient manner.

**Commonwealth of Virginia Emergency Operations Plan  
Emergency Support Function #3**

**C. Department of Emergency Management (VDEM)**

1. Provide appropriate training and tools to help local and state agencies implement a debris management process and to prepare for the cost recovery processes required by FEMA.
2. Establish and coordinate the debris assessment and removal process following a disaster.
3. Develop a list of potential local, state, and federal contacts who may serve on the interagency, multi-disciplinary debris storage and reduction site selection teams.
4. Coordinate with the appropriate regulatory agencies regarding the potential issues that may arise during disaster response and recovery and their possible resolution.
5. Assist state agencies, local governments and other eligible applicants in the preparation and submission of federal disaster assistance grant applications.

**D. Virginia Department of Transportation (VDOT)**

1. Coordinate the removal of debris from all state transportation facilities (e.g., highways, bridges, tunnels etc.), in an environmentally sound manner, utilizing public resources as well as private contractors.
2. Develop and maintain the necessary plans, standard operating procedures, mutual aid agreements,

and model contracts to successfully accomplish task.

3. Pre-identify critical routes throughout the state, in cooperation with local governments.

**E. Department of Forestry (DOF)**

1. Coordinate the removal of debris from all state forest facilities (e.g., hiking trails, campsites, fire breaks etc.) in an environmentally sound manner, utilizing public and private resources.
2. Develop and maintain the necessary plans, standard operating procedures, mutual aid agreements, and model contracts to successfully accomplish task.

**F. Department of Conservation and Recreation (DCR)**

1. Coordinate the removal of debris from all state park and recreation facilities (e.g., hiking trails, campsites, fire breaks etc.) in an environmentally sound manner, utilizing public and private resources.
2. Develop and maintain the necessary plans, standard operating procedures, mutual aid agreements, and model contracts to successfully accomplish task.

**G. All Other Support Agencies**

1. Provide support within their capabilities to debris removal mission under ESF-3 as needed.
2. Develop plans, procedures, and resources to successfully fulfill anticipated support role.



**Commonwealth of Virginia Emergency Operations Plan  
Emergency Support Function #3**

**Debris Classifications\***

- A. Burnable materials: Burnable materials will be of two types with separate burn locations.
1. Burnable Debris: Burnable debris includes, but is not limited to, damaged and disturbed trees; bushes and shrubs; broken, partially broken and severed tree limbs and bushes. Burnable debris consists predominately of trees and vegetation. Burnable debris does not include garbage, construction and demolition material debris.
  2. Burnable Construction Debris: Burnable construction and demolition debris consist of non-creosote structural timber, wood products, and other materials designated by the coordinating agency representative.
- B. Non-Burnable Debris: Non-burnable construction and demolition debris include, but is not limited to, creosote timber, plastic, glass, rubber and metal products, sheet rock, roofing shingles, carpet, tires, and other materials as may be designated by the coordinating agency. Garbage will be considered non-burnable debris.
- C. Stumps: Stumps will be considered tree remnants exceeding 24 inches in diameter; but no taller than 18 inches above grade, to include the stump ball. Any questionable stumps shall be referred to the designated coordinating agency representative for determination of its disposition.
- D. Ineligible Debris: Ineligible debris to remain in place includes, but is not limited to, chemicals, petroleum products, paint products, asbestos, and power transformers.

Any material which is found to be classed as hazardous or toxic waste (HTW) shall be reported immediately to the designated coordinating agency representative. At the coordinating agency representative's direction, this material shall be segregated from the remaining debris in such a fashion as to allow the remaining debris to be loaded and transported. Standing broken utility poles; damaged and downed utility poles and appurtenances; transformers and other electrical material will be reported to coordinating agency. Emergency workers shall exercise due caution with existing overhead, underground utilities and above ground appurtenances, and advise the appropriate authorities of any situation that poses a health or safety risk to workers on site or to the general population.

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\* Note: These debris classifications were developed and used by the U. S. Army Corps of Engineers during the Hurricane Andrew recovery.

**Commonwealth of Virginia Emergency Operations Plan  
Emergency Support Function #3**

**Action Checklist – Debris Management**

**1. Routine Operations**

- a. Develop statewide resource list of contractors who can assist state and local governments in all phases of debris management.
- b. Develop model contracts with generic scopes of work for state agencies and local governments to expedite the implementation of their debris management strategies.
- c. Encourage state agencies to develop mutual aid agreements with other state agencies and local governments, as appropriate, following guidelines established in agency procurement manual.
- d. Encourage state agencies and local governments to pre-designate potential debris storage sites for the type and quantity of debris anticipated following a catastrophic event.
- e. Pre-identify critical routes throughout the state in cooperation with local governments.
- f. Develop site selection criteria checklists to assist state and local governments in identifying potential debris storage sites.
- g. Identify and address potential legal, environmental, and health issues that may be generated during all stages of the debris removal process.
- h. Identify and coordinate with appropriate regulatory agencies regarding potential regulatory issues and emergency response needs.
- i. Develop the necessary right-of-entry and hold harmless agreements indemnifying all levels of government against any potential claims.
- j. Establish debris assessment process to define scope of problem.
- k. Develop and coordinate pre-scripted announcements with Public Information Office regarding debris removal process, collection times, storage sites, use of private contractors, environmental and health issues etc.

**2. Increased Readiness**

A natural or man-made disaster is threatening some part of the state.

- a. Review and update plans, standard operating procedures, generic contracts, and checklists relating to debris removal, storage, reduction, and disposal process.
- b. Alert state agencies that have debris removal responsibilities ensuring that personnel, facilities, and equipment are ready and available for emergency use.
- c. Relocate personnel and resources out of harms way and stage in areas where they can be effectively mobilized.

**Commonwealth of Virginia Emergency Operations Plan**  
**Emergency Support Function #3**

- d. Review potential local, regional, and debris storage sites that may be used in the response and recovery phases in the context of the impending threat.
- e. Review resource listing of private contractors who may assist in debris removal process. Make necessary arrangements to ensure their availability in the event of the disaster.

**3. Response Operations**

Activate debris management plan.

- a. Begin documenting costs.
- b. Coordinate and track resources (public, private).
- c. Establish priorities regarding allocation and use of available resources.
- d. Identify and establish debris storage and disposal sites.
- e. Address any legal, environmental, and health issues relating to the debris removal process.
- f. Continue to keep public informed through PIO.

**4. Recovery Operations**

- a. Continue to collect, store, reduce, and dispose of debris generated from event in a cost-effective and environmentally responsible manner.
- b. Continue to document costs.
- c. Upon completion of debris removal mission, close out debris storage and reduction sites by developing and implementing the necessary site remediation and restoration actions.
- d. Perform necessary audits of operation and submit claim for federal assistance.